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Museum education and the climate of accountability

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Museum Education and the Climate of Accountability

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Abstract

Accountability and Museum Education

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This study examines how the No Child Left Behind Act (NCLB) of 2002's accountability mandates for public schools have affected museum education programs in a large, Midwestern city. For this multi-method study, relevant educational materials were analyzed, and fourteen educational professionals affected by the relationship between museums and public schools were interviewed. As public schools are increasingly pressured to increase students' test scores, cuts in fieldtrip attendance are seen as justifiable, since these experiences do not directly result in students' making Adequate Yearly Progress (AYP) on standardized tests. To remain relevant to these new goals for public education, many museums have tied their field trip content to general state standards, or explicitly linked museum lessons to the tested subjects of math and reading. These alterations further circumscribe public students' educational experiences to testable curricula, and students lose out on learning content that gives their studies real-world context and meaning.

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Introduction

Much has been done over the past half century to ensure that all students have equal opportunities for educational achievement, with the hope that this may offer all a more equal likelihood of future success. While many of the reforms have focused on formal learning environments, educational experiences in these locations have traditionally been augmented with the resources of informal learning settings, like fieldtrips to museums and zoos. The combination of informal and formal learning situations has been used to provide children with myriad learning possibilities, as both environments shape students' educational experiences and therefore their perceptions of the world. This research project seeks to investigate the relationship between the goals of current public school reforms and museums' educational initiatives, namely through investigating the impact of the No Child Left Behind Act of 2002 (herein, NCLB) on museum educational programming.

Fieldtrips to museums have been used for decades to supplement the classroom lessons of the formal education curriculum. Researchers have asserted that these trips enrich students' educational experiences by providing them with knowledge of the world outside their classrooms and allowing them to make important cross-curricular connections, although critics have perceived fieldtrips as novelty experiences that distract students from learning, (Falk & Balling, 1982). Now more than ever, fieldtrips are being squeezed out of the curriculum by the high-stakes accountability mandates of current educational reform measures. NCLB has gone further than other legislation to equate student test scores with school success by exclusively using these figures to determine whether students have achieved adequate yearly progress (herein AYP) in the subjects of

math, reading, and, most recently, science. Now, the untested or untestable elements of the curriculum are no longer priorities for already stretched school budgets and resources. Because of this, NCLB has effectively relegated the experiential benefits of fieldtrips, and the subjects generally experienced therein, as irrelevant.

As legislation aimed at public schools, NCLB does not directly address museum education program content, but the mandated shifts in educational goals have affected fieldtrip environments as well as the classroom. Many museums have experienced drops in student attendance as schools are spending more of their resources on test preparation, and student and teacher programs at museums have needed to alter their programming to accommodate new educational objectives. The full extent of these adaptations has not been thoroughly documented, but initial data show that students are now learning test-oriented materials in the museum, presuming that they have a chance to go to the museum at all.

Research Question/ Subquestions

Taking the above concerns into consideration, this study explores the relationship between the high-stakes testing policies mandated by NCLB and museum[i] education programs. This study specifically focuses on how museum programming within a large, Midwestern city has responded to the current climate of educational accountability. Among the factors that were investigated are the extents to which museum educators have altered their student programming to this environment, as well as how these alterations appeal to schoolteachers who are increasingly accountable for raising their students' test scores. Through investigating these factors, I intended to dissect the

differing agendas in the new museum educational curricula, as museums have become another site in the struggle between quantification and educational breadth.

Rationale for and Significance of this Study

Although much has been written about the impact of high-stakes testing policies on children's in-school learning experiences, there is little information available regarding its impact on out-of-school learning environments. Bracey (2007) has determined that since schools have moved from offering students relevant information to obsessing over test scores, the new role of the fieldtrip will probably impact how students use museums and zoos. Between 2000 and 2008 visits by school groups to Chicago's ten Museums in the Park decreased by 17%, but we do not have a thorough understanding of museums' efforts to retain their audiences, and what the pedagogical implications are of these shifts in foci ("Kids Lose," 2008). Likewise, as students' math and reading scores on standardized tests have become the criteria used to measure yearly progress, it is becoming common for art, science, and history organizations to offer reading and math focused lessons to visiting students (Smithsonian Center for Educational and Museum Studies, 2002). A 2003 position paper by the Maryland Humanities Council indicates that the shift to create museum education curricula that focuses on tested information comes at the expense of improving educational programming in museums' content areas (Burke, 2003).

Museums' traditional educational goals for students have focused on a number of things: developing skills like museum literacy[ii] and teaching about the intrinsic value of the museum's collection; showing students how art relates to culture and how objects can be interpreted; and illustrating to students the multiple ways their lives are shaped by

science and history. In order for fieldtrips to remain relevant to today's standards-based learning environment, museum educators have needed to adapt their programming to what the Department of Education and state standards have deemed necessary for students to learn. By determining the extent to which high-stakes testing policies affect museum education programming, this study will show how these mandates impact more than the formal school system, and have essentially circumscribed the educational experiences of public school students to what is directly relatable to standardized tests. I am particularly interested in examining the relationship between the power structures of formal and informal education and looking at what determines which information is relevant and useful to children's learning experiences.

I came to this topic believing in the necessity of museum education, and currently work in a museum's education department. Because this investigation recognizes the postmodern critique of qualitative research, in which it is acknowledged that no one can be a neutral subject, my positionality as the researcher is important to framing my research (Rubin and Rubin, 2007). As a student in a graduate education program, I have come to see this as another issue of access and equity situated within the greater parameters of social justice education. I am critical of No Child Left Behind's emphasis on test scores because I believe that experiences outside of the classroom have an intrinsic worth beyond what can be quantified by testing.

Review of Literature

A Brief History of School Reform

Over the past fifty years, educational reforms in the United States have established that it is the government's job to determine where schools were falling short

and reward schools for producing better results, and that it is the job of the schools to produce the results that the government requests (Elmore, 2003, p. 26). Federal mandates for the regulation of the educational system began with Lyndon B. Johnson's landmark Elementary and Secondary Education Act (ESEA) of 1965, which created programs to close achievement gaps between higher and lower income students. ESEA was based on research that concluded that simply having access to school was not the same as ensuring students' educational success, and called for reform because these disparate educational opportunities were creating unequal possibilities for students' future success (Wood, 2004). As part of Johnson's War on Poverty, the hallmark of ESEA was the Title I Program, which provided additional federal funds to students in low-income communities (McGuinn, 2006). The underlying logic of ESEA was that it was the role of the government to provide equality of access and opportunity for poor students, and that if poor students had more educational resources they, too, could succeed.

However, over the years it has become clear that providing low-income students additional funds through the Title I program is an inadequate measure in eliminating disparate achievement rates between students of different socioeconomic statuses (SES). Throughout the last several decades, there have been a series of reports and reforms regarding the status of the American educational system, most famously embodied in *A Nation at Risk*, released in 1983. This report by the National Commission of Excellence in Education specifically stated that the American public education system's failings would eventually cause the nation to be less competitive in the global economy (Vinovskis, 2003). This report privileged the subjects of math and science in particular, and suggested that the United States' public school system implement and enforce greater

standards for accountability and competitiveness in these subjects, rather than redesign the system to be more inclusive of different types of learners. These findings influenced the past several decades of educational policy, and resulted in reforms and measures that called for the greater regulation of the educational system and the development of performance standards based on accountability, with an emphasis on testable materials (Furhman, 2003; Superfine, 2005). The proposed "world-class" standards would determine what students should know in order to move the U.S. education system beyond the then-dominant basic-skills educational model, and therefore make the U.S school system more internationally competitive (Massell as cited in Wixson, Dutro & Athan, 2003).

While the goals of historical reforms and the current version of the ESEA, NCLB, are aimed to improve educational opportunities for the poor and eliminate the racial achievement gap, they only propose vague solutions for these problems. Often the call for national educational reform has been fraught with alarmist vocabulary about the fate of the children and the nation, but often these national reforms and warnings did not specify what needed to be done in order to improve students' chances for eventual success in the real world. These mandates may provide schools with more funding to spend on poor children but are not told how to apply it, or they may tell schools that their students are not meeting standards without giving them clear measures to increase their scores (McGuinn, 2006). Overall, the past several decades of school reform have called for an increase in ways to compare student achievement, while providing uneven methods and resources for actually improving it. Until the federal government and educational professionals come to a consensus as to what the goals of students' education

should be, reform measures of this nature will only illustrate what we do not know and provide us with increasingly sophisticated ways of measuring deficits.

NCLB, Critiques, and Possible Alternatives

NCLB mandates and shortcomings.

By the time NCLB was approved in 2002, Congress was still championing the standards-based educational movement, but added measures to make individual states and schools accountable for their students' progress. The major principles of NCLB call for greater accountability for results, expanded local flexibility and control, data-driven instructional methods, and increased parental choice (Yell and Drasgow, 2009). States must submit accountability plans to the government to receive national funding, develop testable academic standards, increase assessments, and publish the results of these tests. NCLB requires that public school students in grades 3-8 be tested yearly in the subjects of reading and mathematics, and once again in high school. A science component was added to the 2006-2007 tests, and although states are allowed to add assessments in other subjects, they are not obligated to do so (Yell and Drasgow, 2009).

While national student achievement tests have been part of the dialogue of educational reform since President Bill Clinton championed performance-based accountability standards in the late 1990s, NCLB has raised the stakes for what the results of these tests mean (McGuinn, 2006, p.134). These results now determine if students demonstrate "adequate yearly progress" (AYP) in mastering state educational standards, which must: "describe what students will be able to know and do; include coherent and rigorous content; and encourage the teaching of advanced skills" (Yell & Drasgow, 2009, p. 21). Each state can write their own standards, determine their own

proficiency levels, and write their own statewide assessments, but only the federal government can designate schools as failing. In some cases this has led to an overall decrease in standards for curriculums and tests, as the *New York Times* reports that Colorado has chosen to deem "partially proficient" levels of academic performance as "proficient" for accounting purposes (Dillon, 2009a).

The most significant difference between NCLB and previous incarnations of the ESEA is that now "school districts and schools that fail to make adequate yearly progress toward statewide proficiency goals will, over time, be subject to improvement, corrective action, and restructuring measures aimed at getting them back on course to meet state standards" (U.S. Department of Education, 2004, para. 5). These progressive corrective measures include: diverting the use of Title I funds to pay for supplementary educational programs, closing failing schools, creating newly privatized charter schools in the place of the failed schools, and allowing students to transfer to better performing public schools (Seashore-Lewis, 1998; Furhman, 2003). However the penalties for failure to meet NCLB's goals were not developed by educational researchers, and have proven to be generally ineffective in increasing students' test scores (Packer, 2007). Richard Elmore, a professor at the Harvard Graduate School of Education, describes this situation: "The AYP requirement, a completely arbitrary mathematical function grounded in no defensible knowledge or theory of school improvement, could, and probably will, result in penalizing and closing schools that are actually experts in improvement" (as cited in Guisbond and Neill, 2004, p. 78). By the end of January 2010, more than 30,000 schools had been labeled as "needing improvement" and qualified for various levels of corrective

measures, and it has been estimated that 75%- 99% of public schools will eventually fail to make AYP (Packer, 2007; Dillon, 2010).

The new emphasis on getting results has caused a major portion of students' school experiences to be determined by testing schedules and mandates, as Doug Alpiger, the principal of Fourth Street Elementary School in New York, NY, describes:

> Assessments are very important, and I said that to the [U.S. Department of Education] Secretary [Margaret Spellings]. It's important for us to use the data to drive our instruction. But the emphasis appears to be so much on assessment that, I'm telling you, at times during the year, our kids are being formally assessed for a month straight (Stolberg, 2008).

Testing may provide comparable data on a year-to-year basis, but ultimately these scores only prove whether students are getting better at taking tests. In fact, one of the greatest flaws in using standardized test scores to ensure equality is that these tests have an inherent bias towards students of high socio-economic status but are ostensibly being implemented to help the most at-risk students, namely minority students who are of lower SES (Anderson, 2007; Walden & Kritsonis, 2008). The students who score lower on standardized tests are more likely to be from lower socio-economic backgrounds, and are also more likely to be in schools that are failing to meet AYP. Standardized testing has been viewed as one more way for people of high SES to justify their privileges and to control what other people, in positions of less power, learn (Anderson, 2007). Policies like NCLB also largely ignore the other structural problems that may contribute to the achievement gap between students of different SES and racial backgrounds (Sizer, 2004; Karen 2005). David Karen, Associate Professor of sociology at Bryn Mawr College,

argues that the achievement gap needs to be sociologically understood as how social groups' lived experiences differ, rather than through how well children perform on tests (2005). He states specifically:

> In thinking about why children perform differently, we need to examine the larger patterns of resource distribution in the society: unequal access to medical and dental care; unequal access to housing; unequal access to labor markets and adequate incomes; unequal access to vibrant communities with high levels of social capital; and, yes, unequal access to educational resources. (Karen, 2005, p. 168)

Karen then states that the only way to change the achievement gap, which is caused by all of the listed inequalities, is to affect change on all of the above situations. To suggest that an emphasis on raising test scores will do away with the social issues that cause inequality oversimplifies a very complicated problem, as financial sanctions and test-centered curricula only further cut into the diversity of choices offered to students in failing schools.

Many educational pundits now admit that NCLB falls short in many areas, although it was written in language that claimed to better prepare students for their future (Guisbond & Neill, 2004; Hursch, 2005). With the pressure to prove that their students are making yearly gains in tested subject matter, many schools now spend much of their time and resources on improving math and reading skills, in hopes that increased time on these subjects will raise test scores (Wood, 2004). NCLB is narrowing the curriculum for many students, and studies have shown that by 2007, 71% of the nation's school districts had reduced the instructional time for untested subjects like history, music, and art in

order to reach AYP mandates (Von Zastrow & Janc, 2004; Jones & Thomas, 2006; the Center on Educational Policy as cited in Packer, 2007).

Just as students are now spending more time on tested materials, their school budgets are also increasing funding for programs that impact test scores. NCLB authorized an increase in funding for schools to meet its mandates, but the difference in the amount actually appropriated for NCLB between 2002-2007 fell short by $56 billion (Packer, 2007). In many cases this has caused many schools to adapt their existing budgets to focus on increasing test scores, and redirect funds that had been earmarked for other programs toward testing preparation. For instance, funding for arts education may become discretionary at the school level, and many school's administrations have had to decide whether arts can be a funded priority in the new climate of educational accountability. A 2004 study found that 36% of public school principals who worked in schools with high minority, low-income populations had cut arts education, and that 42% were considering future cuts to make more time for test preparation (Kennedy, 2007).

Beyond limiting students' education to a narrowed curriculum, critics have also noted that NCLB has moved further than previous educational reforms to privatize public education. By mandating testing goals that are impossible to reach, this legislation ensures that public schools will fail. Private companies write the standardized tests, businesses like Kaplan and Sylvan Learning Centers provide mandatory supplemental services to schools, and other for-profit organizations, like Edison Learning Inc., specialize in creating successful turn-around schools that essentially reorganize and supervise low-performing public schools. While these models may be successful in increasing test scores, they have also managed to take local control away from the school

districts and teachers, supplanting their control with that of the business community (Kohn, 2004). While one can argue that the curriculum was privatized long before NCLB because teachers were using private companies' textbooks written to appease the interests of the two largest states in the country, this level of control goes beyond that. By using private companies to provide mandatory supplementary programs to educate public school children and teaching from standardized curricula, localities stand to lose the right to determine what children learn, as well as the right to educate them. While the law's expressed goals are to strengthen the public school system, the resulting actions of NCLB provide government funding and support to benefit private interests and companies that are seen as rescuing the "failing" public school system.

So far, NCLB has not reached the majority of its mandated goals. These failures stem from a number of issues, including: the inability of the states to enact the changes due to a lack of resources; conflicts between the states and the federal government over goals; and the practical difficulties involved in implementing the mandated reforms (Sunderman & Orfield, 2007). Much attention has been given to the fact that the test scores of students of color have increased since the implementation of NCLB, but these results obscure the fact that they are part of an overall trend of rising test scores. According to an April 2009 *New York Times* article, the racial achievement gap is not closing, but remains consistent, as an increased emphasis on test preparation has also increased white children's test scores (Dillon, 2009b). In this article Peggy Carr, an Associate Administrator of Assessment for the Department of Education, likens the 2008 score gap between black and white 17-year-old students in reading and math as representing a difference of about two to three years worth of learning. What this shows

is that NCLB is working to increase students' test scores, but it is not leveling the overall academic playing field.

The past eight years under NCLB's mandates has ensured that public school students become better at taking tests and quantifying their educational experiences. Although standards were implemented to provide students with a "world-class" education that went beyond the back-to-basics curriculum, many students' educational experiences are now determined by what the standards of the two, sometimes three, tested subjects deem to be minimally necessary. Students are not learning through holistic, engaging educational experiences, and the achievement gap has largely remained where it was before the reforms were enacted. One reason that these models continue to be popular despite their clear shortcomings is that they provide a clear way to compare and contrast students' abilities, and give policy makers a means to determine relative excellence and failure through rankings (Eisner, 1994). However, equity and sameness are not the same thing, and conflating these two concepts does not actually change the educational realities for students who have been expected to do more with less (Eisner, 2004).

Cognitive and ideological concerns.

NCLB's mandates are not based on the cognitive, sociological, philosophical, or psychological understandings of how students learn, and have reduced what students learn in school in order that they perform better on the tested materials. Shirley and Hargreaves, professors at the Lynch School of Education at Boston College, describe the results of such processes: "the achievement gap in tested performance coexists with a widening learning gap between functional basics for the poor and working class and an enriched and enlarged set of learning experiences for the privileged in the suburbs- where

schools are free from many testing constraints and can (and do) fly far beyond the standards" (as cited in McKim, 2007, p. 299). With this in mind, it is important to consider other ways of evaluating education, and the science of how students learn.

Research into human cognition and learning theory shows that the reforms mandated by NCLB often go counter to the ways that students learn (Lewis, 2007). Current school reform models continue to favor antiquated understandings of cognition, and by ignoring the current science of human learning, are ill-preparing students for both competitive jobs in the future economy and to use their own creative capabilities. With the expansion of the understanding of Piaget's work in cognitive development theory, and the later development of research into the area of the cognitive sciences by researchers like Howard Gardner, it is now understood that students learn in different ways, and the most effective teaching caters to students' myriad abilities (Efland, 2002).

However, catering to multiple intelligences and abilities is the opposite of the newly standardized curriculum. Researchers have found the most effective curricula must be contextualized for individual students because "students reach a deep understanding of fundamental concepts incrementally as teachers assess and respond to their perceptions in real time" (Grennon-Brooks, Liberesco, & Plonczak, 2007, p. 749). Efland finds that the modes of teaching that privilege memorization over the building of skills may be effective short-term strategies for test preparation, but may actually lead to later failures in comprehension (Efland, 2002, p. 11). Brown, Collins, and Duguid's research (1989) into cognition describes learning as necessarily situated,[iii] so that many of the school-based lessons provide students with the "know what" over the "know how," which denies them the opportunity to fully master their lessons in situations where they

would actually be used. Although these modes run counter to educational theory, they have become more common for students who need to increase their test scores.

Exacerbating the aforementioned cognitive roadblocks that NCLB has created for students, score-based educational models do not aim to create enjoyable learning environments that encourage students to learn because they actually find the subject personally engaging. The work of Dr. Mihaly Csikszentmihalyi stresses that students learn best when they find what they are doing to be interesting and enjoyable (Schiefele & Csikszentmihalyi, 1995; Csikszentmihalyi, 1991). However, nowhere in the new emphasis on increasing test scores does the law call for creating more engaging, fun environments for students to cultivate intrinsic motivations towards their school subjects and learning in general. Rather, the organization of this system generally considers opportunities for fun to be unproductive in increasing students' test scores. For instance, Edison Schools, Inc. is a for-profit educational system that partners with school districts to ostensibly improve students' educational experiences and outcomes, but many have criticized these new models for using rigid discipline over engagement to encourage students to master material (Campbell, 2007). Learning has the innate capability to be fun, but as long as engaging lessons are considered incompatible with students' educational experiences, students will continue to associate schools and learning with unpleasant, rote test-taking, which ultimately does not apply to their lives.

Just as cognitive processes were ignored in the drafting of NCLB, it is also important to consider how the law runs counter to the work of past and present educational philosophers. John Dewey classified education as "that reconstruction or reorganization of experiences which adds to the meaning of experience, and which

increases ability to direct the course of subsequent experience" (as cited in Schubert, 2010, p. 10). Because he felt that formal schooling was only one component of an individuals' overall educational experience, students' experiences in schools were not their only possibility for success. Rather, for Dewey, learning occurred across a student's lifetime, and the aim of education is, indeed, education (Noddings, 2007). Also championing the idea that students should have an input in their educational experiences, as he stated "there is, I think, no point in the philosophy of progressive education which is sounder than its emphasis upon the participation of the learner in the formation of the purposes which direct his activities in the learning process" (Noddings, 2007, p. 29). Nothing could fall further from the current score-focused mandates than the idea that education is a means for improving student's lives in and of itself, and that the goal of the learner should be considered in this process.

These forms of education are also critiqued by Dr. Kevin Pugh and David Bergin in their view of mimetic and transformative education: "the mimetic relates to a 'transmission' model of teaching and focuses on transmitting predetermined, measurable information to students. The other mode focuses on the transformation of the individual, particularly transformation of values, character, morals, attitudes, outlooks and so on" (as cited in Bracey, 2007, p. 237). Bracey (2007) describes NCLB as "the ultimate mimetic program," (p. 237) and describes how it is up to parents and teachers to use other types of teaching to bring students' learning experiences back to the realm of the transformative. Contemporary educational philosophers have found this same fault with the current structure of formal education, a view best illustrated by Paulo Freire's educational treatise, *Pedagogy of the Oppressed* (1970/ 2000). In this work, Freire describes how

these mimetic pedagogical practices[iv] enforce hierarchical relationships, instead of establishing equal power balance between the teacher and the student. Engaging students in dialogical learning encourages them to think critically and to create the meanings for themselves, and runs counter to the currently popular mimetic practices.

There are modes of teaching that have been proven successful in increasing test scores, student engagement, as well as students capabilities to access their creative capabilities. Studies have shown that constructivist modes of teaching can be effective in increasing test scores while also stimulating interest and authentic learning by creating spaces for students to negotiate their own curriculum (Grennon Brooks, et al., 2007). Another solution to the problems facing schools accountable to high-stakes testing policies has been proposed by Eliot Eisner: setting a new, clear philosophy for the purpose of schooling. Eisner envisions the purpose of education to "enable the young to learn how to access the meanings that have been created (…) through forms of representation," and that it should "help the young learn how to create their own meaning through these forms" (Eisner, 1994, p.19). Specifically, Eisner believes that students should be given opportunities to experience and develop skills in cognitive and affective subjects, rather than privileging those subjects that make students "think" over subjects that make students "feel." Finding all cognitive activity to be affective, and all affective activity to require cognition, Eisner deems both activities necessary for students to learn how to access and create meaning through forms of representation.

John Falk and Lynn Dierking define learning as an individual, idiosyncratic experience that comes from the "ability to combine past experience with the present moment in order to meaningfully understand and, to a degree, predict the future," (Falk &

Dierking, 2002, p. 35), and describe how they see the future of education in free-choice learning. They describe free-choice learning, as "self-directed, voluntary, and guided by individual needs and interests- learning that we will engage in throughout our lives," (Falk & Dierking, 2002, p.9) and indicate that it will become the prominent mode of learning in the 21st century. Just as the work of John S. Brown, Allan Collins, and Paul Duguid finds learning to be situated, Falk and Dierking see well- designed learning environments as necessary to maximize people's learning activities, and that the majority of these free-choice experiences will happen outside of the classroom. By frequenting environments like museums, zoos, and parks, visitors gain lifelong learning skills in areas like problem solving, observation, inquiry, and communication. Overtime, the ability to access free-choice learning environments allows people to pursue their personal interests and curiosities, and generally become a better-informed populace. There are economic advantages to this model as well, as the U.S. is shifting to a knowledge-based economy, and it is becoming more essential for people to learn across their life spans. Free-choice learning may take place though the use of technology like the Internet as well as in recreational educational environments like museums, but only if people have an understanding how to access these resources (Falk and Dierking, 2002).

The classroom environment is currently geared towards increasing test results, and producing students who can follow directions, while devaluing the opportunities to increase students' exposure to subjects outside of the bare minimum prescribed by tested standards. The emphasis of current educational models on quantifiable data does not take into account this shift to a knowledge-based society, and denies students who already have fewer options the resources to adapt to future societal and economic demands. If

education is to truly improve people's lives, then the way it is implemented has to clearly dovetail with how students learn, provide students with multiple ways of making meaning from their environments by including the arts, and has to actually provide them with the skills they will need to be successful in the future economy.

Fieldtrip Benefits and Structures

Benefits of museum learning.

It is widely understood that significant opportunities for learning often happen outside of the school building, and these experiences are intrinsic in shaping the learning potentials and interests of students. Fieldtrips to museums provide students with opportunities to experience informal learning environments and produce learning outcomes that cannot be easily measured. In addition to imbuing students with the skills to become lifelong learners, museums offer many benefits for students at the time of their trip. Different types of fieldtrip experience can help students develop specific skills: visiting art museums can empower students with the skills to understand art and instill them with feelings of ownership; trips to cultural museums can enable students to feel a connection between themselves and that group's history; and trips to outdoor parks can help students perceive and understand issues related to the environment and specific ecosystems. (Zoldosova & Prokup, 2006; Martell, 2008).

Most museums now have visitor-centered, educational missions and provide expanded programming that encourages many different people to visit and enjoy their institutions (Mayer, 2005a/b). Unlike museums of bygone eras that provided fact-based tours given by academics, museums now offer fieldtrips designed by trained educators that engage students in specific activities catered to their ages and learning styles. Olga

Hubard's article "Productive information: Contextual knowledge in art museum education," documents this change specifically in art museum education, since it emerged as its own practice in the 1970s (2007). Hubard notes that education in the art museum has shifted from the traditional pedagogy of "walk-and-talk" tours that emphasized memorizing facts, to providing holistic learning experiences that cater to the experiences of different types of visitors. The new approaches to viewing artwork include having conversations about the work that weave viewer observations and facts together, allowing space for ambiguity in the interpretation of a work, and addressing how an object's cultural meaning changes over time (Mayer, 2005b). Each of these approaches and experiences ultimately provide students with more ways to make sense of their worlds, and are not part of the traditional school curriculum.

This evolution in museum teaching style can also be seen as a broader shift from teaching about the collection's content to teaching about museum literacy. Museum literacy entails learning how to use museums as cultural resources rather than seeing them as places to passively visit. The shift in educational foci comes from the development of museum education into a discipline with its own theoretical underpinnings, whereas the "walk-and-talk" experiences were adaptations of adult and formal education practices. In fact, there is now much discussion in the museum education world about which museum education theories to employ, rather than which theories to adapt from other educational realms (Mayer, 2005b). This development of specialized theories highlights museums' recognition that their own discourse is necessary, especially if the museum is going to be used as a welcoming place for all.

Museum literacy can be understood in terms of Pierre Bourdieu's conception of cultural capital, which he defines as the "possession of symbolically valued cultural accoutrements and attitudes" (as cited in Grenfell & Hardy, 2007, p. 30). Most museum and in-school educational curricula elevate privileged aspects of dominant culture and assume that all students have access to the same cultural capital, even if all do not. In the case of museum learning, this embodied cultural capital is an understanding of and intellectual disposition towards the objects on view. This embodied cultural capital can then be used to access and understand the museum's objectified cultural capital, or the specific cultural objects contained inside the museum (Bourdieu, 106). Regular museum visits give students access to the necessary embodied cultural capital, and while parents are welcome to take their children to museums, many are limited by financial and time considerations (Mayer, 2005b). Therefore, fieldtrips by school groups actually give students the skills to continue using and understanding museums, which they may not have a chance to develop in their home environment. Universal access to the cultural capital in museums through fieldtrips moves museum knowledge away from the realm of economically and socially privileged students, so that all students can share in cultural information.

Trips to museums have the capability to expose students to lessons and subjects that have been constructed for the whole of society, even as NCLB is privatizing public schools and the curriculum that is learned therein. Opportunities outside of formal schooling allow students to engage with subjects which may not have been deemed necessary by the school's administration or the state's education committees, and expose them to a broader sense of the world around them. While one could argue that every

student is exposed to various public pedagogies in the form of books, radio, and popular culture, studies have shown that students from different backgrounds are exposed to these resources in varying ways (Savage, 2010). Additionally, while students may be exposed to these media sources, they are not often sources of study, and students may miss out on how the messages therein can impact their lives and choices. Because of this, the public pedagogy of museum visits can be essential for exposing students to elements excluded from the formal curriculum's standards, which can give them a better sense of the scope of subjects that they can learn about, as well as concerns and causes important to their local communities (Kridel, 2010; Yun Lee, 2010).

Although initially ambivalent about the function of museums,[v] the late American philosopher and education theorist John Dewey eventually concluded that frequent trips to museums by school children are necessary for maintaining a democratic society (Constantino, 2004). Not only do these trips expose children to a variety of cultural resources, but they also force the museums that students visit to develop an inclusive, accessible learning environment to accommodate diverse school-age populations. Today this is visible in the multiple types of signage and interpretive materials available at museums, as most anticipate that different types of programs and materials are necessary to meet multiple levels of learners. Maintaining audience diversity is necessary to ensure that museums continue to offer various levels of programming and accessibility, as programming is created for the audience as much as the audience attends because of offered programming.

Fieldtrip structures: one-time trips and school partnerships.

Specific museum programming for students can be broken down into two categories: one-time programs and sustained partnerships. Common types of one-time programming have been described above, as they encompass the traditional "walk and talk" tours, programs that foster museum literacy, and trips that seek to provide students with in-depth information about the collections. However, because of the benefits museum visits provide for students, many museums also have established formal partnerships with schools to formally link the museum's resources with what children are learning in the classroom. These often include providing teachers with pre or post visit materials to integrate the museum visit into their classrooms, teacher training opportunities, and structured multi-visit curricula that provide students with more in-depth knowledge about the museum and their collections. These partnerships can be essential for student learning, as Anderson and Zhang's study of schoolteachers' beliefs about fieldtrips concluded that the main factor that determined a fieldtrip's success and ease was when the museums provide clear links between their fieldtrip goals and school-based curriculum. [vi] (Anderson & Zhang, 2003)

Teacher programs at museums generally focus on training schoolteachers to use the museum as a teaching resource, which then allows them to interpret the museum's content for their students. An example of this form is the Urban Advantage program in New York City, which connects the city science programs to school curricula and provides teachers with training to use the institutions as educational resources. Every year 27,000 students from 156 middle schools in the New York City area take part in the program, and use their fieldtrips as research for larger projects, rather than as a day away from learning (Cavanagh, 2008). Because individual teachers determine the content that

their students learn at each museum, the Urban Advantage program aspires to create strong connections to their curricular content and that each visit will be relevant to students' larger learning goals.

Other forms of school-museum partnerships may bring the museum's content to the student's school for more in-depth lessons. Just as learning about school subjects can be reinforced in the museum, museum-school partnerships may also bring lessons based on the museum's collections into the classroom. The Solomon R. Guggenheim Museum's Learning Through Art (LTA) program provides yearlong residences for artists to work in New York Cities' public elementary schools to create curriculum-based projects for the students. A research study funded by the U.S. Department of Education found that these projects helped develop the critical thinking skills of the students when they looked at art and text. Rather than the traditional one-time fieldtrip, the success of this program largely hinges on the sustained nature of the project, as participating artists visit schools twenty times over the year (Downey, Delamatre, & Jones, 2007).

Museum-school partnerships where teachers and museum education staff collaborate to create meaningful, long-term lessons for students have the most potential to provide students with the benefits of both environments. I find the best example of this kind of partnership at the School in the Park program in San Diego, California, which was initially created to ease overcrowding at Rosa Parks elementary school. Rosa Parks is a public elementary school that has a free and reduced lunch rate of 99.9%, and educates a culturally and linguistically diverse group of students, most of whom would not be considered a museum's primary audience (Pumpian, Fischer & Wachowiak, 2006). The innovative curriculum of this program combines formal, in-school instruction

with carefully planned units at the museums in Balboa Park, so that all students in the third, fourth and fifth grades spend up to twenty-five percent of their time at museums.

By spending close to a quarter of their academic year at the School in the Park, students learn to use museums as enjoyable educational resources, and make connections between their many core subjects. Several independent curriculum specialists analyzed the School in the Park's programs based on how well they taught specific subject areas, and found that although each of these curriculum specialists wrote only about their distinct academic areas, they often discussed the same units (Pumpian et al., 2006). These lessons were successful in communicating several principles at once, rather than artificially isolating academic units from each other. This school model began as a solution for overcrowding by rotating out groups of students to museums, and rather than keeping the focus on test preparation, it created inter-subject connections that actually preserved students' excitement for learning.

Another added benefit of this program is that the students at Rosa Parks elementary school come from communities who have not historically been considered to be the museum's primary audience (Pumpian, et al., 2006). A number of students discussed how they shared their museum experiences with their friends and family, who were then encouraged to also view and use museums as an educational resource. While immigrant and minority groups have been historically excluded from opportunities to become museum literate and share the cultural capital that the museum possesses, this program allows students to access the information and objects possessed by the museum and also situates them as part of the culture for which museums are created.

These models for partnerships create necessary links between the scientific and cultural information available in the museum and the educational opportunities of public school students. These programs demonstrate that prolonged exposure to a subject, either for the student or for the teacher, is a successful way to reinforce curricular content by using the resources of the museum. Long-term educational collaboration like the School in the Park, seem to be the most promising for exposing students to a diverse array of educational subject matter while satisfying necessary curricular requirements. Formal museum-school partnerships are essential for utilizing the museum's content to the fullest degree, but they require even more commitment than the traditional fieldtrip.

Methodology

Conceptual/ Theoretical Framework/ Methodology

My investigation of this topic explores how positivistic[vii] curricular requirements place an emphasis on certain subjects, and how the application of these requirements in different schools determine the extent that students learn about non-core subjects, specifically while they are on fieldtrips. I examined this relationship through a multi-method study that included interviews with museum educators, museum education department directors, schoolteachers, and teachers in residence in museum education departments. This qualitative study is situated in the post-positivist paradigm of social constructivism because it acknowledges that people create the reality around them, and that using interviews is a good way to understand how each individual has constructed their own reality (Schram, 2006; Creswell, 2007). These methods allow me to interpret each individual's understanding of their experiences as museum or classroom educators as well as how they perceive the impact of NCLB on fieldtrip goals and outcomes. By

using a qualitative research design, I was able to investigate how the world of education has been constructed by various power structures and how representatives from each of these arenas view their roles. Through this information, I was able to determine the extent that the climate of educational accountability influences the goals, outcomes, and attendance of educational experiences designed by museums.

I approached this question from a critical lens[viii] to advocate for the museum and the museum learners affected by these policies, as NCLB's AYP mandates limit students' educational opportunities, necessitating that their teachers focus on tested materials. Opportunities to experience education in a museum setting are important because they enable students to both learn how to use museums as educational resources and expose them to the cultural capital therein, while NCLB eliminates these opportunities because they are not considered important for those students. This ultimately only serves to reinforce the stratification of American society, as policies like NCLB dictate that wealthier children in private or well-performing public schools are allowed to learn "extraneous" subjects, while poor children in low-performing public schools have an education bounded by the basic, tested subject matter. This critical stance also leads me to a position of advocacy, which is defined by Cresswell as research that contains an action agenda to change the institutions that are being studied (2007).

Sample Population

In conducting the research for this project, I interviewed fourteen people whose professional lives are affected by NCLB and museum education programs in Shelbyville, a large city in the Midwestern United States. These individuals were identified and contacted through personal and professional connections, and all identifying information

has been removed from the data. This group consisted of two directors of museum education departments, seven museum educators working in teacher and student program departments, three teachers currently teaching in the local public school system, and two former school teachers currently working as teachers in residence in a museum education department.

In order to ascertain the impact of these policies on different types of knowledge, I interviewed museum educators from several different types of museums. The institutions included in this study were the Shelbyville Art Museum (SAM[ix]), Shelbyville Natural History Museum (SNHM), Shelbyville Civics Museum (SCM), Shelbyville Museum of Natural Worlds (SNM), the Shelbyville Zoo (SZ), and the Children's Museum of Shelbyville (CMS). In order to better understand how different positions accommodate these testing policies, multiple individuals from the same institution were interviewed when possible. By speaking with museum educators, I hoped to gain an understanding of what they are currently doing to accommodate NCLB's mandates and how their programming has changed since the implementation of this law. The two directors of museum education departments with whom I spoke had been in their positions for a decade or longer, and were knowledgeable about how the field of museum education had changed over time as well as informative about the "big picture" issues in the field.

The schoolteachers that were interviewed came from elementary and high schools in the Shelbyville Public School System (SPSS). Specifically, I spoke with a middle school social studies teacher, a high school art teacher, and a high school humanities teacher. These teachers came from schools that do not have current partnerships with

museums, and their experiences represent the majority of teachers whose schools do not overtly advocate for museum learning. I also spoke with two teachers-in-residence at the Shelbyville Nature Museum, whose role it is to teach fellow teachers how to use the collection and provide the museum information about being in the trenches in the public school system. These two individuals were previously high school science teachers in the SPSS, and could speak to the differences in goals and structure between working in a public school and in a museum education department.

Methods

The methods of data collection for this study were a combination of interviewing museum educators and schoolteachers about their experiences adapting their programs to high-stakes testing policies and reviewing their educational program materials. This combination of collection methods allows me to combine the strengths of both: interviews provide me with insight into each participant's experience, while document analysis supplies a necessary contextual understanding of the social and professional world in which these individuals live (Marshall & Rossman, 1999). I also looked at what criteria the museum and school educators use to determine success of their museum-based programs and fieldtrips and which factors they consider when planning these lessons. Specifically, I looked to determine how museum educators use state or national standards when planning their lessons, and to what extent they plan their curricula around providing testable information.[x] When interviewing the schoolteachers, I sought to understand what their perspectives are on both NCLB and the value of learning about subjects in museum settings.[xi]

Each participant was interviewed once, and each interview lasted between thirty to sixty minutes. Interviews were digitally recorded, and were conducted in the participant's office, or in a neutral location, depending on the preference of the participant. In general interviews consisted of one-on-one dialogue between interviewee and the researcher, although in several cases museum educators invited their colleagues to the interviews to provide a more holistic view of their department.[xii] All participants were given information sheets about their privacy rights that detailed how their confidentiality would be maintained throughout the course of this study. Follow-up questions and clarifications were conducted via email or telephone calls, but were generally kept to a minimum out of respect for the busy professional schedules that participants typically kept. Educational materials from participating museums, compiled results of surveys of museum educators, and existing literature on the topic were used to triangulate emergent themes from the information provided in these interviews. The data was then coded for common themes and practices, and these data sets were analyzed to identify the ways that museum educators are adapting their programming to fit the educational goals of accountability.

Limitations of Research Design

As with most quantitative research projects, this research design could not collect all possible data, nor are the results generalizable to the experiences of all museum educators. I interviewed a small number of people from a selection of museums within the city of Shelbyville, and my findings represent how these specific individuals adapted their institutions to the current educational environment of high-stakes testing. By gathering data through interviews, I was able to construct a picture of what specific

museum educators and teachers have or have not done to adapt educational experiences at museums to NCLB's mandates, and to understand how they feel about these accommodations. My interviewees' perspectives of their realities inform me about what is happening right now in their specific circumstances, and because this design is dependent on social constructivism, I know only what the interviewees tell me and will have to take their interpretations as fact. (Schram, 2006)

Findings

> There's value in having your kids visit a museum, explore a new space and achieve mastery over that new space, it opens their eyes up to the world that's beyond that 3 mile radius around their school- just the fact that it's an informal learning environment that's distinct from the classroom- I feel like a lot of teachers get that. But there's so much pressure exerted on them, or above them that's exerted on their administrators, so (fieldtrips are) going to continue to be a challenge. (Diane, Shelbyville Civics Museum)

After collecting data, I found that museums have adapted their programming in response to NCLB, but the degree of this shift varies within each institution. Museum educators, program administrators, and school teachers all acknowledged the importance of fieldtrips for students, and indicated that the recent policies and mandates had shifted the goals of fieldtrips and generally made them more difficult to plan and execute. This data has been broken down into sections that detail how NCLB has affected several areas associated with museum education: teachers' experiences planning and carrying out fieldtrips; student programming at museums; and educator professional development.

NCLB and Fieldtrips: Classroom Perspectives

> I think the way that we see the effects of NCLB is that teachers can't come. They can't leave their classroom until- there are some periods of time that they are mandated that they can't leave, so everyone wants to come at the end after testing- that's really the part that we would like to address in some way. It's not really the content of our workshops, it's more that they can't get here even if they wanted to. (Keri, Educator at the Children's Museum of Shelbyville)

NCLB mandates that students demonstrate adequate yearly progress (AYP) on standardized tests, and because these tests determine the success or failure of the school, teachers are pressured to ensure that students perform well, even if they know that many structural factors also influence test scores. Many teachers have a complex relationship with the new tests and mandates, as Barbara, a high school humanities teacher, describes:

> (Testing) has been my arch-nemesis ever since NCLB was produced, because I continue to work in populations where students are brilliant, and they keep taking these tests that tell them that they are stupid. For various reasons, and we can argue (that) the test is biased, but the reality is that a lot of my students (…) are not able to show what they know. I have exactly one year with them, and there is only so much I can do.

Teachers throughout the United States echo Barbara's frustration, and now their professional organizations have taken up this cause. The National Education Association (NEA), the NAACP, the National Council of Churches, the Children's Defense Fund, and the National Alliance of Black School Educators, all have come out against NCLB (Packer, 2007). The NEA's website in particular features sections on its website dedicated to teachers' personal stories about NCLB, particularly their concerns that these

tests do not cater to the individual needs of their students, and how testing detracts from providing students a comprehensive curriculum (NEA, 2010). While acknowledging that the tests are flawed, teachers are now finding more regulations on how they spend their class time, and are now required by their administrations to spend a significant portion of their time on test-taking preparation. Barbara describes how this can be a challenge for some teachers:

> I can fold it (test preparation) in, but I can see how a lot of new teachers cannot. It's challenging- it's very challenging to get everything in and balance it out. If someone says that 'your test scores have to go up and you need to do test prep every single day'- I can understand how they would be like 'I have no time to take a fieldtrip, that's a waste of time.'

This test preparation can consist of teaching test-taking strategies and focusing time on the subjects that will be on the test, and often results in a reduction of time spent on untested subjects. There are national and state learning standards in seven basic categories: fine arts, language arts, mathematics, physical education and health, science, social science, and technology, but only the scores on reading, mathematics, and recently science tests are used to judge whether a student is meeting requirements for yearly progress. Given the pressure on teachers and schools to ensure that students demonstrate AYP in tested subjects, teachers in failing schools find that they are obligated to devote the majority of their time to teaching those areas. In many cases, this leaves less emphasized subjects like the fine arts and social studies as afterthoughts. Cindy, a high school art teacher, describes how her college courses prepared her for the current high-

stakes environment where she is teaching a subject whose relevance is not enforced by testing mandates:

> Art was the first thing that was going to be cut, (it is) never tested- so you had to know how to make your program relevant. So every lesson plan I ever wrote, I had to know. I know- it's really funny, but I think I know my state standards better than my English colleagues because I had to be able to defend- you know, 'this is why I teach this, because it meets state goals 25 and 27.'

By using the vocabulary of the mandates, Cindy has found a way to reinforce the relevance of her subject. Cindy has found that she needs to cite the standards to justify teaching her own subject during class time, let alone for taking trips to study this topic, which would necessarily cut class time for other subjects as well. In many cases, teachers are finding that if it is not on the test, then it is not an option to be taught.

The other major way that testing influences teacher's abilities to take fieldtrips is that schools must often wait until after all testing has been completed before they can leave the school at all. Megan, an elementary school social studies teacher, describes:

> Testing is done usually March or April, usually the spring of the year, so you kind of work your beginning and middle into that, kind of gearing toward the test. The end of the year you're still working on the standards, but there is usually a little more flexibility (…) to do things at the end of the year that aren't so focused on what you need to cover for the test.

Because curricula must be planned around testing calendars, there is only a small window of time for students to leave the classroom, and the entire Shelbyville's Public School System (SPSS) is on the same testing schedule. Teachers in the SPSS may not know

what grades they will be teaching until a couple weeks before the start of the school year, which makes advanced planning for trips extremely difficult. Barbara expressed her frustration with this scheduling issue because she found that by the time she has a chance to plan her curricula and devise an appropriate trip, all of the available slots for those institutions have been booked. As with many urban school systems, there is a high rate of change and last-minute decision making in SPSS, which makes it difficult for many teachers to plan trips far in advance. While Barbara has found trips to a number of local institutions to be greatly beneficial to her students, she often does not have enough advanced notice to schedule them consistently.

If a museum can accommodate a teacher's request, the teacher must then go through the logistical challenges of actually planning the trip. All of the teachers with whom I spoke described the amount of work needed to get students out the door as extensive, as Megan details:

> I submit my request (to the office), I have to get it approved, and I have to contact a bus company, then I have to send out a permission slip, then I have to collect the money, then I have to reconcile everything. All of those are steps before we get out the door, and of course we're doing the pre-activities and then going on the fieldtrips. And when we go on the fieldtrips you have to get chaperones, so you have to keep track of the kids.

The teachers with whom I spoke saw this planning as a necessary hassle, as they all generally believed that fieldtrips were essential for their students' educational growth and understanding. If they can arrange to plan a trip, they find that they are excellent ways to get to know their students better while teaching more in-depth about their studies and the

city at large, as many of these trips provide students with a context to their studies that they would not otherwise have.

This issue of providing a context to their students gets to the heart of the paradox that this back-to-basics curriculum creates for them, in that this mimetic style of education does not prepare students for the real world, and that often knowledge of the real world is needed to do well on tests. Barbara, a high school humanities teacher, describes this issue for her students as such:

> Testing is so removed from real-life experience (…) the reason that my students don't do very well on the reading section is because they don't have a lot of background knowledge on the topics that they are asking them to read on, and then they're asking them to answer questions on things that they've never heard of before. You've heard me mention before the section on 'the medieval tapestry'- like, 'what is medieval and what's a tapestry?' (…) So if we go to a museum and we learn about an artist, and then there is an article that maybe talks about the medieval and an artist, they could be like 'oh, that somehow connects to me.'

Fieldtrips provide Barbara's students with a relevant context for their studies and, in her view, possibly a way to increase their test scores, but she sometimes feels that she needs to fight her administration to provide them for her students. Many pressured administrations are finding that fieldtrips are too expensive and can be seen as time spent away from preparing for tests. Museum educators have learned that the schools' perennial budget crisis has become one of the major obstacles to fieldtrips, as Diane at the SCM describes:

> Schools often cannot get the funding to go to museums, whether it's because the funding that's been cut, they can't afford the buses, or they can't pay for the substitutes. We had teachers telling us when gas prices were $4.50 a gallon- that that cost gets passed down to them by the bus companies, and they can't absorb that cost. So we'll see what happens, moving forward, to see what kinds of obstacles teachers find in bringing their kids outside the classroom.

Being that school administrators already see the time away from the classroom as a detriment to learning tested material, it is now harder to justify costs of supplementary fieldtrips. From 2005-2008, Compton Avenue Elementary School in Los Angeles cut its fieldtrips in half because they no longer fit into a budget that emphasized test scores, even though the trips were enriching and academically based (Popescu, 2008, "Kids Lose," 2008). Many museums now offer grants to cover fieldtrip transportation costs for qualified schools in order to encourage their continued attendance, but several museum educators admitted that their funds are not as well-publicized as they could be.

Overall, teachers are finding that it is very challenging to take students out of their classrooms on fieldtrips unless their administration is supportive of these learning environments. Financial pressures, logistical difficulties, school calendars, and pedagogical models which privilege learning experiences that are explicitly designed to increase test scores in specific subjects all threaten to take fieldtrips out of students' regular educational experiences. However, teachers generally see the value in presenting such opportunities, and will continue to advocate for experiential learning opportunities both in and outside of the classroom. If the educational system continues to use high-stakes testing models of reform, it seems these experiences will continue to be reduced

for students whose schools are poorly funded and threatened to be closed because of failure to meet AYP, regardless of the benefits that they provide to students.

NCLB and Fieldtrips: Museum Education for K-12 Students

Learning to use the museum.

Museum education has been impacted in various ways by the mandates of NCLB, but the overall goals for museum's student programming have not been drastically altered. Museum educators generally expressed that their programming still aims to teach students how to use their museums' resources, and to instill them with the skills and interest to be lifelong learners. All the better if the museum lesson reinforces with what the students are learning in their classrooms, but for many museum educators their primary goal is to make students feel welcome in their institutions. Lynn, an educator at the Shelbyville Natural History Museum (SNHM), expressed her objectives for visiting students as such:

> We certainly want them to have a powerful learning experience that's related to their biology curriculum as part of stepping foot into this museum, but really I think the strongest impact, for the audience that we serve is being able to bring a student into this museum and changing their thinking, that 'wow, this is a place for me to explore and discover, and I am welcome here.'

Studies have shown that experiences though school fieldtrips are essential for creating museum-visiting habits among students from underrepresented groups of museum visitation. In fact, several reports have found increased partnerships with school districts to be one of the best ways to increase museum visitation by minority groups (Smithsonian Center for Educational and Museum Studies, 2001; Nightingale as cited in

Lansky, 2009). In addition to exposing students to the museum's content and ideally creating life-long learners, teachers and museum educators have expressed the importance of exposing students to cultural capital uncommon in their everyday environments. As Barbara conveyed: "it's getting students out of the west side and seeing the world. There is the actual physicality of leaving your 'hood and going somewhere else that is beautiful." Because many of the student programs specifically target school populations who may not otherwise visit the museum, museum educators and teachers find that museum visits are essential for students to continue to visit the museum later in their life.

Instilling visitors with a lifelong love of learning is a general goal for most museums, as their institutions generally cater to students as well as families and adults. Museum educators often develop lessons in concert with their institutions' research departments, and focus on topics that appeal to multiple ages and learning styles. Museums have not traditionally required their educators to hit certain standards or topics, and museum educators have significantly more freedom than classroom teachers to design materials that are based on their own interests, and are fun and interactive. In fact, because museum educators do not necessarily have classroom experience, they have very different perspectives on how to design learning materials, and what these outcomes should be. Alexis was a exception to this rule, as she was a former classroom teacher now working as a teacher-in-residence at the Shelbyville Museum of Natural Worlds (SMNW), and was able to discuss the difference between the types of lessons designed by museum educators compared with the lessons she had to plan for her own classroom:

> The ideas that they come up with and they generate- 'let's do this and let's try this.' They might not be practical for every classroom but that sparks in me a bit of creativity to think about what we (classroom teachers) can do. (…) I get inspired by the educators that we have on staff because they think outside the box- and the classroom can get very boxy- very much a 2 by 4. To the book and the four walls of the classroom- and that's just a dead end.

The ability to transcend the classroom's allotted materials allows museum educators to make many different kinds of connections between museum resources and their audiences. The importance of these connections has been reaffirmed by national educational reform documents, like the *National Science Education Standards*, which states: "The classroom is a limited environment. The school science program must extend beyond the walls of the school to the resources of the community" (as cited in Duran, Ballone- Duran, Haney & Beltyukova, 2009, p. 54). While the classroom has determined to be a limited environment, it is the only one that many students experience because of these testing policies.

Museum educators are now finding that the engaging and thought-provoking lessons that were attractive to teachers before NCLB can no longer be successfully marketed as such. Many museum educators have found that because of the current need to quantify formal learning through testing, many of the educational decision makers have difficulty reconciling informal learning environments with their understanding of what education should look like. Keri, Student Program Manager at the Shelbyville Children's Museum, describes this issue as such:

> I think there are those in education who have not bought into the fact that learning can take place outside of the classroom. As long as the 'powers that be' have that mindset, this will be a struggle. If the people (…) making the decisions really bought into (the idea that) you could learn circumference in a pumpkin patch as easily as you could learn in a classroom, I don't think you'd see this resistance.

These cognitive benefits of these out-of-school learning environments have been well documented, however. Just as Brown, et al. (1985) explain that situated learning necessitates more than discursive models to teach students to use their newly acquired knowledge, Sotto also describes how fieldtrips to museums provide excellent opportunities for students to experience the lessons learned in school because "to learn something new, experience and action are necessary to build the model" (in Hooper-Greenhill, 2003, p. 143). Researchers posit that these environments provide learning outcomes by allowing students to re-contextualize school lessons, enable students to develop personal interests in subjects that were presented in playful ways, and offer students the ability to pursue their own interests when choosing to interact with different aspects of the museum (Donald, 1991; Falk, 1999). While providing students with myriad experiences that stimulate their minds, none of these outcomes offer tangible data regarding how these experiences increase test scores.

Exacerbating perceptions that museums are not environments that facilitate real learning is that museums often do not employ enough educators to facilitate student programming, which means that museum education departments can be dependent on volunteer support. Jennifer, the head of the education department at Shelbyville Zoo

expressed her concerns with how using volunteers for the zoo's educational programming impacts the institution's professional standing:

> I feel that it tends to be the policy makers who may not recognize that the research base of our field is just as strong and robust as those in formal education. (…) I think that's the thing that we're working hard to overcome, and I think that creating more programming that is staff-led and volunteer supported is one step to promoting that view. I think sometimes when you are trying to point out a level of expertise, but yet you have someone with only 10 hours of training actually teaching, those two can be at odds.

The current economic recession has severely impacted many museums' operating budgets, and many will continue to need volunteers to facilitate their educational programs. A recent survey published in the *Journal of Museum Education* found that museum staff positions have been reduced by approximately 25% since the recent recession (Kley, 2009). Among the 99 responding institutions, the majority of the positions were reported lost in administrative and educational departments (64% and 61% of responding museums reported losses in these areas, respectively), while the fewest reductions were made in museum sales staff (32%). No doubt, this further reduction of education staff will only increase museum's dependency on volunteers and exacerbate the perception that museum education programs are not grounded in a research-based profession.

Museum educators and teachers agree that fieldtrips to museums are necessary for students to apply knowledge acquired in class lessons to the real world, and that these applications deepen students' understanding of the materials. In addition to exposing

students to a world outside of their own neighborhood, which many teachers and museum educators described as being a necessary function of museums, trips to these institutions build skills that enable students to continue to access these institutions and the cultural capital therein. While museum educators have traditionally been encouraged to teach materials that were engaging and somewhat outside of the formal curriculum, the validity of these free-choice learning environments has been questioned in light of the current testing-focused models of educational reform. As both schools and museums are feeling a budget crunch due to politicized funding models and the recent economic recession, opportunities to experience these lessons from trained museum educators are reducing, and leave students to learn from less-trained, although well-intentioned, volunteers.

The museum experience adapts and aligns to tested standards.

NCLB has gone further than previous laws to regulate how students can spend their time, to define what constitutes a proper learning environment, and to determine which subjects are meaningful for them to learn. Because NCLB has essentially "re-branded" what education should be, and how ideal outcomes can be measured, museums have found the need to shift the way they present their lessons to make them more attractive to contemporary educators. Eric, the Director of Education at the SMNW, notes that one of the major shifts that museum educators have experienced is that they now have less flexibility to entertain their students:

> One of the things we've struggled with as a museum is that schools are much less likely to let a group go out on a fun fieldtrip. What has had to happen over the last 20 years is that when teachers write a lesson plan it simply cannot say 'a fieldtrip to the museum,' it has to explain what standards they're hitting and what

> they're going to learn in order to get it approved. Again, that's because of everything needing to be focused on math. So we're a museum that maybe 20 years ago really was that fun thing that might spark an interest down the line. We now have to show a school that there is testable educational value to what we're doing. This is going to help their kids on their tests.

As Eric describes, students' activities in school and out of school have both changed to accommodate what will be on their tests. Informal learning environments have the capacity to show students that learning can be fun, create museum-going habits that continue to affect them into adulthood, and provide students with the context to make sense of their worlds, but are now required to provide a differently structured experience. The goal of every student's educational experience should be to give them the tools to cope with the world as well as to show them that there are many wonderful, interesting ways to learn. While policymakers may see the removal of fun activities from students' educational experiences as renewing their focus on what really matters, this change also severely impacts how students can view their worlds.

Prior to NCLB's mandates, museums often planned cross-curricular lessons that gave students an idea of how the carefully delineated subjects taught in their schools naturally overlap, which provided them with a context and a deeper understanding of how the world fits together (Barry & Villeneuve, 1998). Both the museum educators and teachers with whom I spoke said that teaching in a cross-curricular way was one of the best ways to reinforce what students were learning, as Keri at the SCM describes that "as we as an institution learn more about how students learn, (everything) becomes more interconnected." Museums still typically plan lessons that draw on a number of subjects,

but the emphasis of this interconnectivity is now on how the museum's subject matter also intersects with mandated knowledge, in order to prove that the trip, and even the museum's discipline, is relevant to a student's learning. Previously, teachers and administrators would have understood the intrinsic value of the trip's content as justification enough for a day away from class, without the need to officially tie it to the tested information.

As Eric mentioned at the beginning of the section, the Shelbyville Museum of Natural Worlds is now obligated to show that students are learning math while they are at the nature museum. This redesign implies that the environmental sciences are not significant for their own sake, and that they can only be validated when delivering something that guarantees an increase in students' test scores. This situation may be shifting for science museums, as now schools are beginning to be held accountable for their students' science scores. In fact, the educators who I interviewed at science-based institutions (the Shelbyville Museum of Natural Worlds, the Shelbyville Zoo, and the Shelbyville Natural History Museum) mentioned that over the past couple years they have had an increase in school visits, as teachers are more easily able to make their case for increasing students' science comprehension. At the same time, the increase in accountability for science happened several years ago, but educators at SMNW are still obligated to tie their materials to mathematics lessons. Museums whose disciplines fall farther way from those testable subjects, like the arts and social sciences, have found that while they may be able to tie their materials to state standards, the standards that directly link to them are not those that are actively being tested and monitored. Many of these institutions tied their lessons to reading activities, as Diane from the Shelbyville Civics

Museum explains: "you can actually improve a student's proficiency in reading if they're reading something about civics- so that's something that every museum educator is thinking about."

However, lessons like this beg the question of why you would need to take a student to the museum to read an article, as that type of lesson is more appropriately done in a school setting. This adaptation could have detrimental effects on students' perceptions of what museums are for, as Zeller (1995) states "if children are to see museums as something other than a continuation of classroom exercises, then fun, purposeful play, challenging new experiences, being with friends, self-directed exploration and discovery, and spontaneity must be major parts of the museum experience (p. 7)." Using Eisner's theory of expressive outcomes,[1] Thomas Poetter also argues that fieldtrip experiences should be different from those that traditionally determine teachers' lesson plans for measurable behavioral and problem-solving objectives (Poetter, 2006, p. 320). Encouraging museum educators to remove educational elements that inspire and entertain their students in order to reinforce testable lessons serves to circumscribe students' notion of education as something that is only useful for test scores.

Making the museum experience closely mirror not only the content, but also the structure of the classroom strongly undercuts the benefits and possibility of future use of the museum. How to build standards-based lessons while still utilizing the physical components of the museum and its collection has therefore become a point of contention

[1] Elliot Eisner's theory of expressive outcomes focuses on activities that are done for their overall educational results have "expressive outcomes" brought about through "expressive activities." (Poetter, 2006)

for museum educators accommodating NCLB's mandates. Eric describes this effort at the SMNW:

> The struggle is still (meeting accountability mandates) but maintaining that out-of-school experience for kids. When they come to the museum it's fun, it's a different learning environment. But we're trying to balance it being a different learning environment and making sure that what we're doing is going to meet the needs of the teachers and the kids so that they can keep coming back here and using the resources. We struggle with that constantly on a program basis- making sure that it's not too classroom-like when they're here.

Museums are no longer justifiable for the sake of providing interesting, real-world education, and instead need to show how they can help students on tests that have been shown to have little real-world applications. Likewise, providing students with experiences to excite them about learning has become less important on paper than showing that students might increase their math or reading scores.

On the other hand, museum educators have indicated that tying state learning standards into museum programming is not exceptionally difficult, as Keri describes standards, "a lot of them are broad, a lot of them are what you'd want to do anyway, so it's not that hard to do." However, without being explicitly told that teachers need to see these linkages, many museums have not traditionally included them in materials. In fact, some museums that have not experienced a drop in attendance have not significantly altered their programming, and continue to market their lessons the same way. Claire, the teacher program coordinator at the SAM, explained that her institution continues to have a high demand for student tours from schools in the SPSS as well as from schools in

the surrounding suburbs. Claire only added writing standards to teacher materials when her previous supervisor championed their inclusion, as "there's no one telling us to do this (tie content to standards) unless we're accountable to a foundation that really cares for a specific grant." Museums whose numbers have been impacted by the new reforms, however, have needed to get savvier to the new educational landscape, and it has become more common to see the state standards clearly delineated in education materials for teachers. However, there is still no official stance within the museum education community that a good lesson plan must include how it ties to state standards, and it remains an informal, albeit necessary, practice.

Now that museums have entered into the world of educational accountability, they are finding that their programs must provide measurable outcomes for participating students. As one of the central requirements of NCLB is that federal funds may only be used for scientifically-based teaching methods, the need to provide data to back up instruction is profound (Yell & Drasgow, 2009). Just as Claire mentioned that standards may be needed for private funding, museum educators have found that quantifiable numbers are important for teachers to make their case to administrators and for museums to make their case when applying for grant funds.

> If you're looking at a large government grant where they give you really significant amounts of money what they expect at the end is that you had some impact on the kids. To have impact on those kids you need to address the things that those kids are expected to learn and some way of measuring that you've addressed that at the end- that they have learned something from it. (Eric, SMNW)

Many museum educators discussed the various ways that they had sought to collect data about the outcomes for their programs, including surveying the teachers either right after or months after the trip, inviting students back to do a visit in a couple of months to see what they had retained, or even the possibility of having students fill out a questionnaire before leaving the museum. So far, none of the museum educators that I interviewed had found a reliable, long-term way to collect quantifiable data, as many do not have the resources or the time to pursue this information. While most acknowledged that there was a definite need to capture the outcome of their trips for students, it seems that for the most part they are still struggling to find the best way to do this. Binks and Uzzell (2003) have outlined a number of ways that museums can monitor their programs, including: conducting in-depth interviews of small samples of people; using questionnaire surveys, structured interviews, or behavioral mapping; or utilizing a combination of observational techniques. They found that these methods may provide the museum educator with some data, but they are often labor intensive or time-consuming, generally require the time and permission of the group being monitored, and may necessitate the use of a computer with advanced data analyzing programs (Binks and Uzzell, 2003). Given that many museum education departments are experiencing budget and staff reductions, these extra steps have so far proved to be unworkable.

Several museum educators have also acknowledged that it is ultimately impossible to correlate the museum experiences to higher test scores, as Diane at the Shelbyville Civics Museum acknowledges:

> And it (the museum educational experience) is not going to be on the test, it's just not the way it works. So, it is difficult for us to prove the things that the most rigid

> educational professionals and administrators are looking for. 'Do test scores go up ten points? Okay then you can have a fieldtrip.' We know that it's not how it's going to work.

While museum educators have begun efforts to quantify the learning outcomes that their programs provide, they have also found that they can use the students' low test scores to make an argument for going on fieldtrips:

> In a lot of my proposals I cite testing statistics to determine the need for increased science programming- it's a very good way to beef up your proposal. So, no surprise, if you took at the National NAEP, the nation's report card, the last one in science was 2005. (Shelbyville) scored below the nation and also below other comparable cities. When you want to control for some of the things that we face in here- poverty, second language acquisition, populations that tend to be less successful in certain academic areas, even when you control for those kinds of things we are below the average. So those are the types of statistics that can hopefully help a proposal move forward, but it's also convincing that these experiences aren't necessarily supposed to raise test scores, they're supposed to provide science literacy or artistic literacy or historic literacy- whatever is the focus of the mission of the institution.

By arguing that environments where students are not very exposed to science on fieldtrips has contributed to low test scores in science, Jennifer at the Shelbyville Zoo has turned this traditionally anti-trip argument on its head, to show how low test scores are a reason for students to come to the museum.

In addition to adapting the fieldtrip model to accommodate a more serious, standards-based mode of teaching, museums now offer materials and resources for teachers to use in their classrooms, so that students can be exposed to museum education wherever they are. These can consist of pre-trip materials that prepare students for their fieldtrip, or they can be entire in-class trips that use museum resources for guest lecturers, loans of specimens, or loans of exhibits that do not necessitate visiting the museum at all (Bonner, 1985). Most museum educators would prefer that students come to the museum on a fieldtrip, but these in-school trips are a concession to the fact that everyone does not have adequate resources to visit their institutions. In-school trips are easier for teachers, as they do not require pre-trip planning, are generally less expensive, and take much less time out of the day. Megan finds that in-class trips "can probably be done more frequently in the months even before the testing, because if it's somebody coming in just to talk and do an activity with your kids, they're generally not going to be there for much more than a couple hours- so it's not interrupting the whole process." While Megan acknowledges the relative ease of this new model, she still believes that it does not equal the benefits of the fieldtrip, as "going to the museums, I'll still do that because they can't bring to the classroom the experience of going out there and seeing and touching, because the whole thing- it's fun, fieldtrips are generally a very fun experience."

Another growing practice for museum outreach is web-based educational components for teachers and students to use. These may be in the form of digital museums, which are online databases of the institution's collections that students can manipulate, or online forums that provoke discussion by and interaction between different groups of students (Standen, 2005;"Smithsonian Institute to digitize," 2008;

Wetterlund, 2008). The use of the Internet to virtually engage visitors in education discussions is increasing as a way to make museum collections accessible. Among the museums that I spoke with, the SCM has a very extensive online component to their programming that encourages interaction from students all over the Midwest. The SCM and the SNHM both provide extensive online curricula guides for teachers, and the SAM has much of their collection online, and offers other educational content that students can use, like podcasts and web-based activities. Research into this relatively new form of fieldtrip has found that they encourage student interest and involvement in the museum's subject or content, while effectively limiting the novelty factor that distracts some students on site-based trips (Cassady & Mullen, 2006).

Museum educators have had to change their programming significantly in the wake of high-stakes testing models. In addition to providing justifications for their programs by tying their lessons to state standards and implementing program evaluations to demonstrate quantifiable results, museum learning can no longer advertise or structure itself as a fun, engaging experience that appeals to students' imaginations and expands their personal interests. While some museums have had to adjust more than others, all museum educators indicated that this shift was necessary to appeal to teachers and administrators who are accountable to raise students' test scores. In some cases these changes have predominantly affected the print materials associated with museum lessons, as they provide justifications in writing for teachers, but generally all museums found a need to somehow tie content to state standards. As science scores are now being used as another indicator of student achievement, science museum educators have experienced a general increase in student attendance and less pressure to tie to math and reading

materials, but still generally offer these components to their lessons in hope of appealing to the broadest audience. Museums that offer programming in art, social sciences and specifically for children can tie their content to state standards in their corresponding subjects, but have found a need to create programming that also ties in reading and mathematic-based lessons, which are tested and measured fields. Without these adaptations, these museums have generally found that their educational materials and programming are seen as irrelevant in the larger scheme of increasing students' yearly test scores in those subjects.

NCLB and Fieldtrips: Educator Professional Development

Teacher professional development.

Traditionally, museums designed teacher programs as tutorials on how to use museum resources in their classrooms, how to teach their subjects in-depth, and as a resource for planning better museum trips. However, since NLCB there has been a shift in what teachers should be teaching, as they are under much more pressure to teach to the test and eliminate extraneous activities or subjects. Eric at the Shelbyville Museum of Natural Worlds describes how teacher programs have adjusted to this new emphasis:

> One half (of the education department) is teacher professional development and everything they do is focused on improving the way teachers teach science. So for any programs that are in that area, the goal is to make teachers comfortable with doing science in their classroom- whether it be, and we focus on environmental science but we do a lot of other things, too: to make them more comfortable doing this and more competent at it; to understand where their limitations are and to overcome those; to understand that they won't have all of the answers and that's

> alright, but to know how to work with getting those answers for the kids; and to try to overcome the barriers that are real and perceived about teaching science. They don't have materials, they don't have the time, or that they have to focus their time on math. If that's the problem, then here are science activities that have math in them. So do these as your science activities- they're going to love the math and look at the science. Or, here are books that can be read during your reading time that are science related. We've had a lot more interest in doing more science and literature workshops with teachers because- again, reading and math are pushed so hard that incorporating science reading into the reading time has become more interesting to them.

The SMNW's teacher education department still offers teachers the necessary skills and materials to teach science in their classroom, but has adapted to NCLB's emphasis on math and reading. Just as student programming is now tied to state standards in reading and mathematics to justify fieldtrips to their institutions, museum's teacher education programs have added this component to help teachers justify teaching these lessons their own classrooms. Claire at the SAM described how she had recently led a lesson for teachers to use a current museum exhibition in teacher's classrooms as part of a writing activity, and several of the science institutions directly synced their programming with mathematics lessons. Moisan describes this new practice in adapting museum materials to testable subject matter, in her article about the Chicago History Museum's partnership with public school teachers to create in-school materials that use "literacy as a method to explore key history and humanities themes" (Moisan, 27). Moisan explains that it is necessary for teachers to make use of limited classroom time by

focusing on literacy and social science goals. Museums are certainly champions for the importance of their collections, but this new element of teacher education programs establishes them as being among the few current champions of their subject matter.

In addition to helping teachers plan classroom lessons and build competencies in the museum's subject matter, teacher education programs also must give teachers the resources to justify trips to their institutions. As class time for the liberal arts generally have been reduced (CBE, 2004), making the argument to go on fieldtrips that focus on these subjects has also become more difficult. Keri at the Shelbyville Children's Museum (SCM) mentioned that she and her staff were trying to give teachers new ways to account for and validate fieldtrips, specifically by showing them how to pull quantifiable data from their fieldtrip experiences with their students, as well as giving them the vocabulary to best express themselves to administrators:

> One of the things that we talk about here is documentation and observation- sometimes teachers don't have the tools to communicate that. So a lot of the teaching that we do (…) is helping the teachers look and observe their children in a playful experience and then put that into words for parents, principals, that 'we learned all of this because we were outside doing this.' (...) There's a vocabulary that comes with communicating that field experiences are effective, and if you lack that vocabulary it can be very difficult to get the administration on your side, that these things are valuable. Because you kind of have a sense that 'if we're in the classroom doing multiplication for 20hrs, then surely we have to learn something.' But we probably don't have that sense that if we're in the pumpkin

> patch for 20 hrs, then surely we're learning something. We don't have that connection.

By giving teachers the vocabulary to make their case for trips, museums have essentially had to learn how to address the new quantitative learning environment that NCLB has created. The SCM has not changed the content of their teacher trainings because they believe they still offer useful and relevant experiences. However, by adapting the language of accountability to describe fieldtrip outcomes, they are able to provide teachers with a more attractive way to present fieldtrips to their school administrations.

Fieldtrips must now clearly delineate how they tie into state standards, and another important aspect of teacher programs is to show teachers how their programs directly link with the testable material. As Jennifer at the Shelbyville Zoo describes:

> Making those connections isn't hard for me at the zoo- I think it's very easy for me to make those connections to science. I think the difficulty becomes letting the teachers know that those connections are there- I think sometimes that's where the challenge is. So, I find the creation of the link isn't difficult, but letting everyone know that that link is there is what I think is taking more time.

Unlike the SCM, which enables teachers who already were enrolled in their programming to articulate their argument to their administration, Jennifer has touched on how difficult it is for museum educators to connect with teachers. Stating how their exhibitions meet the state standards in their online curriculum packets implies that teachers are already looking to use their websites, just as mailing lists tend to only send information to those who sign up for them, and workshops are presented to those people who have decided that the content is worthwhile. In many cases, museum educators and teachers

acknowledged that there is a large gap between what the museum offers and what the teachers are aware of. All of the teachers that I interviewed said that they often found out about what museums offered after it was too late to sign up for programming, and that they would prefer a better way of finding out about these programs and supporting resources, like travel grants.

Overall, museum educators are finding that not only do they need to offer teachers programming that demonstrates how to use the museum's collection for fieldtrips, but now they are also responsible for giving educators the tools to justify teaching the museum's subject matter at all. In some cases this is limited to showing teachers how to use the right vocabulary to justify fieldtrips, but in other cases museum education programming has expanded to giving teachers the tools to validate teaching those marginalized lessons in their own classrooms. Museum educators are finding that many teachers do not have the time or the support of the administration to teach students subjects that are not tested, and are now re-focusing their educational offerings to show teachers how to use museum resources for testable subjects like math and reading. However, as the teachers who attend these trainings are generally a self-selected group of professionals, and may be attending for personal reasons, these lessons and materials only reach professionals who have the time and acknowledge that they can do more to teach these untested subjects.

Museum educator professional development.

Prior to NCLB, museum educators developed lessons based on current exhibition themes, or topics that they found to be personally interesting. This method may have been rewarding for educators, but it has become obsolete as teachers now need fieldtrips to be

clearly applicable to state standards and goals. As Jake at the SCM explains, the current shift to mandated material "really forces museums specifically to make sure that their programs are relevant to teachers and students, because a lot of times museums will just churn out this stuff, that to us makes sense why we're doing it, like, 'of course everyone wants to know about 18th century (…) horse husbandry.' You don't need necessarily a lesson that has to do with that." Jake has chosen an extreme scenario as an example, but he does point to an argument that many people in the formal education system made about museum programming being extraneous. However, it should be noted that the previous mode of educational programming was successful in teaching children about interesting museum subject matter, and that formative learning experiences often go beyond what the state standards deem to be relevant.

In making this shift to clearly justified museum curricula, museum educators have found that their traditional methods for preparing lessons needed to change. Previously dependent on studying their museum's subject matter, many museum educators are finding that they now need to study the policies and needs of formal education. In order to clarify the new needs and mandates of the school system, many museums have now formally partnered with schoolteachers. These partnerships may consist of employing schoolteachers in residence within their education departments, or meeting with teacher advisory committees (TACs) to help them plan formal educational projects and partnerships. As Jake at the SCM elaborates:

> We're educational institutions, but we're not schools, so we're not always the most attuned to what is happening in the schools. Or at least, it's kind of a trickle down thing. Because we're not classroom educators we're not confronted by it,

so our only contact with these issues are through the teachers that we know. You're going to find out more about it if you have a TAC, a teacher advisory committee, if you have something like that, who's going to help clue you in on it.

These committees can be vital in identifying teacher needs and addressing whether the museum actually meets them. Museum educators have described how groups like these are essential for conveying to them what teachers need from the museum, and how to improve programming if their needs are no longer being met.

Working with TACS, museum educators have learned that the new federal education mandates necessitate a better understanding of the formal education. Few museum educators took the mandates of NCLB into consideration after it was first passed, and any information that they knew was generally understood through the teachers that they worked with. Over time, museum educators began to see a decline in visitation numbers, and found that their programming was no longer being as sought after as it had been in the past. Museum educators met in spring of 2007, for a conference in response to how museums should accommodate the mandates of NCLB. Giving museum educators an overview of the law and its implications for their programming, the focus of this conference was to address the current issues and brainstorm on what museum educators could do to retain their audience.

A survey of the effects of NCLB on museum education was compiled for this conference and showed that most museum educators found the effects of this policy to be predominately negative. While 75% of 106 respondents had noticed an impact on the museum's visitation or participation as a result of NCLB legislation, only 12% said that this impact was either neutral or positive. Many educators noted that they were getting

fewer school groups because the subjects of their museums were difficult to quantifiably test, and that they ran into conflicts when teacher's curricula dictates that they teach specific subjects at specific times, which may not coincide with when museums have particular programs. One example of this was that a museum had traditionally offered a butterfly themed lesson every spring, but found that the new testing calendars prohibited students from leaving their building at this time.

Unless museum educators continue to work with the formal educational community, they run the risk of offering programming that is engaging, but ultimately useless for educators who do not feel that they can take a day away from tested subjects to focus on so-called "extraneous" materials. Continued collaborations between teachers and museums stand the best chance of providing the resources and demonstrating the worth of museum programming, while providing museum educators the necessary view from the field to which they are appealing. These working relationships require buy-in from both partners, and need to be sustainable to offer long-term benefits for both communities.

Conclusion

In 1992, the American Association of Museums (herein AAM) published *Excellence and Equity: Education and the Public Dimension of Museums*, a report that laid out how museums should become more inclusive and how to become oriented towards being agents of social change. In this document, the AAM addresses the ways that museums can better serve a variety of public interests by embracing cultural diversity in all of their programs. *Excellence and Equity* cites three tenets needed in museum mission statements to accomplish this: to commit to education as a central goal of the

museum; to provide programming that includes the needs and desires of the various social and ethnic groups; and to encourage leadership from inside and outside of the institution (AAM, 2008). With this call to encourage access by all groups, museums became responsible for responding to community needs, but now those needs have changed (Dodd, 2003). Again museums are finding the need to shift their programming, but this time it is to accommodate the narrow subject matter deemed important because it is tested.

Museums provide challenging, interactive educational programming, but are finding their focus on inclusion to also be antiquated. In their ideal form, museums are spaces where students can cultivate skills in critical thinking, learn about the value of the arts and culture, and develop the desire to become life-long learners, but these skills are no longer attractive in the current climate of educational accountability. Since the implementation of NCLB, museums have found that they need to re-brand themselves and the disciplines they represent. Using the vocabulary of standards and test scores, museum learning has become one more thing that needs to be measured and validated, and it is only important if it connects to testable subject matter. Fun, engaging environments in which students learn about the world around them and create life-long museum learning habits are no longer worthwhile as goals, and are instead secondary to preparing students for tests which are known to be biased. Even more troubling, this move toward teaching tested subjects to the near exclusion of everything else removes the possibility for students to experience other forms of knowledge and learning that may make them engaged in the world. As museums have moved more towards offering teachers professional development to show them how they can still teach marginalized

subjects in this new educational climate, they have essentially needed to qualify and quantify entire disciplines which had previously been understood to have merit on their own terms.

Teacher and community advisory committees, comprehensive surveys of teachers' needs, and formal, but flexible partnerships with school districts are all important for ensuring that their programs actually satisfy the needs of their target populations. More intensive museum-school partnerships, such as San Diego's School in the Park, offer the best chances of providing opportunities to students to learn about museums while still adhering to state standards and testing. Overall, the museum would need to be open to community suggestions, but may find, over time, that they are being used by a more diverse, satisfied group of visitors. Efforts must also be made to demonstrate the importance of these museum learning opportunities to school administrators. Principals are ultimately in charge of the budget and decide who gets to leave the building, and very little has been done to ensure that they understand why students should have the opportunity to learn in a museum setting.

Museum educators need to understand what the law means for their institutions and programs, and whether their programming actually satisfies the mandates that NCLB has created for schools. In addition to learning more about how the law affects them, museums should join the chorus calling for changes in what NCLB requires schools to accomplish and how they set about testing these requirements. If the law is not changed, educators could work at a state level to lobby for their subject matter to be one of the tested subject areas, as science museum educators have noticed an increase in trips to their institutions since it became a nationally tested subject. In the meantime, museums

need to continue to tie programming to state standards so that teachers can continue to qualify fieldtrips, but this may mean that for the time being they will need to create more math and reading lessons.

Before any of the aforementioned changes to NCLB can be made, many schools will continue to struggle with finding the resources to go on fieldtrips. In the meantime, it is important that museums continue to offer alternate educational experiences to schoolchildren. If museums have multiple ways to deliver content to students, they can reach a diverse group of students, including those who would not be able to physically visit the institution. Utilizing technology allows museums to bring educational content and discussions to students, and Web 2.0 capabilities, such as discussion forums and virtual museums, allow students to creatively generate their own museum experiences. In-school lessons have great potential for schools that are constrained by testing, but transfer the costs of transportation, portable materials, and staff time back to the museum, and cannot be comprehensively undertaken unless the museum reorganizes or allocates more funding for these new endeavors.

If these conditions do not change, there will be dire implications for the many groups involved in these museum-school collaborations. Teachers will stand to lose an opportunity to get to know their students in a different context, while teaching from the physical objects and artifacts that represent their subjects. The exclusion of these students from museums has broader ramifications than trading reading proficiency scores for an understanding of how to interpret a contemporary art installation. Museums create the educational content for their public audiences, and if school groups are systematically excluded by their own mandates, one must question whether such programming for new

groups will be accessible in the future. At the same time, creating programming that provides standardized educational content may ultimately circumscribe the museum's public pedagogy to the minimum requirements mandated by the private interests who wrote NCLB. Most importantly, disparate museum education experiences may create unforeseen effects on students. Those students whose parents can afford the time and cost of taking them to the museum, or those whose schools are not in danger of failing, experience the expressive outcomes of museum learning while facilitating museum literacy. The rest learn pared-down and course-specific facts in preparation for a test that paradoxically is supposed to give them more opportunity. To educate students away from a love of learning benefits no one, and unless actions are taken to reduce the importance of test scores on students' educational opportunities, these policies will continue to threaten the relevance of students' education. In the meantime, it seems that any exposure to museum education will have to serve as a foot in the door for students, until policies shift and students can learn at museums for the sake of their own intellectual curiosity.

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[i] Please note that for this study the term museum will be used to describe any non-profit institution that a school visits for educational purposes. Burcaw defined museums as "permanent, public, educational institutions that provide systematic care for collections" (as cited in Bonner, 1985, p. 288).

[ii] Mayer defines museum literacy as the understanding of how to use a museum's collection as an educational resource (2005a, 2005b).

[iii] Brown, Collins, and Duguid describe such learning activity as being necessarily tied to the context, or situation, in which the learner acquires it (1989).

[iv] In the banking concept of education, knowledge is a gift bestowed by those who consider themselves knowledgeable upon those whom they consider to know nothing. Projecting an absolute ignorance onto others, a characteristic of the ideology of oppression, negates education and knowledge as processes of inquiry" (Freire, 2000, p.72).

[v] Dewey initially saw art museums as removing art from the everyday experience and thus as responsible for taking the value of teaching art education out of schools.

[vi] It should be noted that linking the content of a fieldtrip to school curricula is not the same as using the museum to reinforce testable materials, as the curricula has not always been circumscribed by the testable standards.

[vii] Positivism a theory based on the belief that knowledge can only be derived from observable phenomena. This theory then hierarchically arranges the types of knowledge that can be quantified, such as the physical sciences, as having more meaning than those with less observable outcomes, like philosophy and the arts.

[viii] Marshall and Rossman describe critical research methodologies as seeking to critique traditional modes of research because they legitimatize existing power structures that are oppressive to society (1999).

[ix] The acronym used for the Shelbyville Art Museum, SAM, should not be confused with the same used by the Seattle Art Museum, and is in no way meant to represent this other institution.

[x] See Appendix I for Interview Protocol for Museum Educators.

[xi] See Appendix II for Interview Protocol for Schoolteachers.

[xii] Two teachers in residence at the Shelbyville Museum of Natural Worlds and the teacher and student program staff members at the Shelbyville Children's Museum were interviewed together.

Appendix I: Museum Educator Interview Protocol

Name of Interviewee:

Position at Museum:

Date:

Questions

- Can you please tell me what you do at X museum? (Position description)
- What education programs do you currently offer?
    - For school children?
    - For teachers?
- How did you decide on which programs to offer?
- Please describe the nature of any pre- or post interaction you have with teachers (if any)
- What are the ideal educational outcomes of these programs?
    - What do you want the students to walk away with?
    - What makes a program a success?
    - Do you use any forms of evaluation?
- What challenges, if any, do you have with planning trips for school children?
- Are you familiar with high-stakes testing polices? (No Child Left Behind)
    - Can you describe what you understand about these policies?
- Have these policies impacted your educational programming?
    - If so, can you please describe to what extent things have changed?
    - Who decided that these changes needed to happen?
- Have these changes impacted the number of student groups attending the museum?
    - Have they impacted the structure of their visits?
- Absent policies like NCLB, what would you like students to get out of the fieldtrip experience?
- Is there anything you'd like to add that I might have missed for me to better understand this topic?
- Do you have any questions for me?
- Can I contact you with follow-up questions if I have them?
- Do you know of anyone that I should talk to regarding this topic?

Appendix II: Schoolteacher Interview Protocol

Name of Interviewee:

Grades/ subject matter taught:

Date:

Questions

- Please describe a typical school day.
- What is your experience with preparing students for state and national tests?
    - How much time do you spend on these preparations?
    - What do you consider the value of these tests?
    - How, if at all, has NCLB affected what you do in the classroom (vs. before NCLB)?
- Do your students go on fieldtrips?
    - How many a year?
    - How do you determine which your students will go on, or when they will be offered?
- In your perspective, what role do fieldtrips play in your teaching?
-What do you offer in your curriculum after the fieldtrip?
- What is your involvement with the determination and delivery of educational content on a fieldtrip?
- What is your relationship with the museum?
- Have you been to any teacher trainings at any institutions?
    - How do you perceive these teacher trainings?
    - Is there anything that you would like museums to offer to teachers that they do not already?
- Can I contact you with follow-up questions if I have them?
- Do you have any questions for me?
- Do you know of anyone that I should talk to regarding this topic?

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